more rapid resolution of urticaria. Thirty nine papers were found using the reported search, of which two presented the best evidence to answer the clinical question. The author, date and country of publication, patient group studied, study type, relevant outcomes, results and study weaknesses of these best papers are tabulated. A clinical bottom line is stated.

Clinical scenario

A 4 year old girl presents to the emergency department with an urticarial rash. Her general practitioner has prescribed an oral antihistamine but the rash has persisted. You wonder if there is a role for oral corticosteroids in this otherwise well child.

Three part question

In a [child with acute urticaria] does the [addition of oral corticosteroids to antihistamines] lead to [more rapid resolution of symptoms].

Search strategy

Cochrane Database of Systematic Reviews Issue 3, 2003. Medline 1966-10/03 using the OVID interface. Cochrane: 'urticaria' Medline: [exp urticaria OR urticaria$.mp] AND [exp steroids OR steroid$.mp OR exp adrenal cortex hormones OR corticosteroid$.mp] AND [Randomized Controlled Trial.pt OR Controlled Clinical Trial.pt] LIMIT to human.

Search outcome

Cochrane Database of Sytematic Reviews—no relevant results. Medline search results—39 articles, of which two were relevant (table 3).

Comment(s)

There are no studies specifically aimed at children with acute urticaria. These limited trials demonstrate improvement in symptoms when prednisolone is prescribed, but larger studies are needed.

► CLINICAL BOTTOM LINE

In patients presenting to the emergency department with acute uricaria, the addition of oral prednisolone to an antihistamine results in decreased itch and more rapid rash resolution.

Pollack CV Jr, Romano TJ. Outpatient management of acute urticaria: the role of prednisone. *Ann Emerg Med* 1995;**26**:547–5.
Zuberbier T, Ifflander J, Semmler C, *et al*. Acute urticaria: clinical aspects and therapeutic responsiveness. *Acta Derm Venereol* 1996;**76**:295–7.

Ice, pins, or sugar to reduce paraphimosis

Report by Kevin Mackway-Jones, *Consultant*
Checked by Stewart Teece, *Clinical Research Fellow*

Abstract

A short cut review was carried out to establish which of the ice glove technique, the multiple puncture technique, or the application of sugar was the best approach for paraphimosis reduction. Thirty three papers were found using the reported search, of which three presented the best evidence to answer the clinical question. The author, date and country of publication, patient group studied, study type, relevant outcomes, results and study weaknesses of these best papers are tabulated. A clinical bottom line is stated.

Clinical scenario

You are asked to see a 19 year old man who has presented to the emergency department with paraphymosis. He states that he fell asleep after sex the night before and woke up with swelling. Simple traction has failed to cure the problem (but has brought tears to his eyes). A surgeon, a specialist registrar in emergency medicine, and a urologist are already in attendance. The first says that multiple punctures should be made with a needle, the second that an iced glove should be used, and the third that sugar should be applied. You wonder whether any of the suggested methods are evidence based.

Table 3

Author, date and country	Patient group	Study type (level of evidence)	Outcomes	Key results	Study weaknesses
Pollack CV Jr and Romano TJ, 1995, USA	43 adult outpatients with acute urticaria given IM diphenhydramine then randomised to oral hydroxyzine plus either 20 mg prednisone 12 hourly for four days or placebo	RCT	10 point visual analogue itch score at 48 hours. Itch score at 5 days	Mean 48 hour itch score 1.3 in prednisone group *v* 4.4 in control group. Five day itch score 0 in prednisone group *v* 1.6 in control group	Adult patients only Small study No power calculation
			Description of rash at 48 hours and 5 days	No difference between groups at 48 hours. Rash resolved completely at 5 days in prednisone group	Rash not described at five days in control group
Zuberbier T *et al*, 1996, Germany	109 adult and paediatric patients with acute urticaria treated with loratidine 10 mg daily or prednisolone 50 mg daily for three days followed by loratidine 10 mg daily until remission of symptoms	Non-randomised prospective cohort study	Days until cessation of whealing	65.9% of had cessation of whealing by 3 days and a further 15.9% by 7 days in Loratidine group, compared with 93.8% by 3 days and a further 3.1% by 7 days in the prednisolone group. Resolution in all patients after >21 days. NNT with prednisolone for resolution of symptoms by 3 days = 4	Number of children unstated Different exclusion criteria between groups (potentially pregnant women excluded from loratidine group)

Three part question
In [an adult male with irreducible paraphimosis] is [ice better than multiple puncturing or sugar] at [reducing swelling and allowing reduction]?

Search strategy
Medline 1966-10/03 using the OVID interface. [paraphymosis.mp OR paraphimosis.mp OR exp paraphimosis OR (foreskin.mp AND retraction.mp)] AND [reduc$.mp OR exp ice OR ice$.mp OR puncture$.mp OR exp punctures OR sugar.mp].

Search outcome
Altogether 33 papers found, of which three were relevant (table 4).

Comment(s)
There are no comparative or randomised trials in this area. Current treatment is based wholly on custom, practice, and word of mouth. Further research is warranted.

► CLINICAL BOTTOM LINE
All three methods have been shown to work, but there is no evidence to show which is best. Local guidelines should be followed.

Houghton GR. The ''iced-glove'' method of treatment of paraphimosis. *B J Surg* 1973;**60**:876–7.
Gonzalez Fernandez M, Sousa Escandon MA, Parra Muntaner L. Sugar: treatment of choice in irreducible paraphimosis. *Actas Urol Esp* 2001;**25**:393–5.
Kumar V, Javle P. Modified puncture technique for reduction of paraphymosis. *Ann R Coll Surg* 2001;**83**:126–7.

Is intravenous aminophylline better than intravenous salbutamol in the treatment of moderate to severe asthma?

Report by Andrew Munro, *Registrar*
Checked by Michelle Jacobs, *Specialist Registrar*

Abstract
A short cut review was carried out to establish whether intravenous salbutamol or intravenous aminophylline offers the quickest and least complicated treatment for patients with moderate to severe asthma not responding to inhaled therapy. Altogether 71 papers were found using the reported search, of which nine presented the best evidence to answer the clinical question. The author, date and country of publication, patient group studied, study type, relevant outcomes, results and study weaknesses of these best papers are tabulated. A clinical bottom line is stated.

Clinical scenario
A 20 year old man is brought to the emergency department in acute respiratory distress with asthma. He has a history of poor compliance with unstable asthma and several hospital admissions in the past. His old notes are available and you notice whenever intravenous treatment has been started he has been given aminophylline. You feel that the best drug is a β_2 agonist and that if it is not getting to the receptors via the airways then intravenous is the next best route. There is some dismay among the nursing staff when you formulate an intravenous regimen. They say they have never given it before. You wonder whether your approach is evidence based.

Three part question
In [patients with moderate to severe asthma resistant to inhaled β_2 agonists] does [IV aminophylline or IV salbutamol] result in [quicker relief with less side effects]?

Search strategy
Medline 1966-10/03 using the OVID interface. [(exp albuterol/OR salbutamol.mp) AND intravenous.mp] AND [exp asthma/OR exp bronchial spasm/OR exp bronchoconstriction/OR bronchoconstriction.mp] AND [exp aminophylline/OR aminophylline.mp OR exp theophylline/OR theophylline.mp] LIMIT to human AND English.

Search outcome
Altogether 71 papers found of which 62 were considered irrelevant or of insufficient quality for inclusion. The remaining nine papers are shown in table 5.

Comment(s)
Multiple small trials of reasonable quality show intravenous salbutamol to be as good if not better at reversing obstructive airflow in asthmatic patients. Those studies that were equivocal used drug regimens that could be considered subtherapeutic or confounded. Side effects, although present seem to be well tolerated. Recent or high powered trials comparing the two drugs do not exist.

► CLINICAL BOTTOM LINE
Intravenous salbutamol should be considered a first line agent in the acute management of severe asthma in adults.

Beswick K, Davies J, Davey AJ. A comparison of intravenous aminophylline and salbutamol in the treatment of severe bronchospasm. *Practitioner* 1975;**214**:561–6.
Williams SJ, Parrish RW, Seaton A. Comparison of intravenous aminophylline and salbutamol in severe asthma. *BMJ* 1975;4:685.
Tribe AE, Wong RM, Robinson JS. A controlled trial of intravenous salbutamol and aminophylline in acute asthma. *Med J Aust* 1976;**2**:749–52.
Femi-Pearse D, George WO, Ilechukwu ST, *et al.* Comparison of intravenous aminophylline and salbutamol in severe asthma. *BMJ* 1977;1:491.
Johnson AJ, Spiro SG, Pidgeon J, *et al.* Intravenous infusion of salbutamol in severe acute asthma. *BMJ* 1978;1:1013–15.
Evans WV, Monie RD, Crimmins J, *et al.* Aminophylline, salbutamol and combined intravenous infusions in acute severe asthma. *Br J Dis Chest* 1980;**74**:385–9.

Table 4

Author, date and country	Patient group	Study type (level of evidence)	Outcomes	Key results	Study weaknesses
Houghton GR, 1973, UK	10 patients with paraphimosis aged 8–91 years. Iced glove placed for five minutes	Case series	Reduction	9 of 10	Small numbers No controls
Gonzalez FM *et al*, 2001, Spain	Three patients with paraphimosis Application of granulated sugar for one to two hours	Case series	Reduction	All reduced	Small numbers No controls
Kumar V and Javle P, 2001, UK and India	45 patients with paraphimosis Multiple puncture in patients with glans engorgement (39)	Case series	Reduction	All reduced if no skin changes	Small numbers No controls